Question Section: Things you know that you don't know	Question Section: Things you didn't know that you don't know
 31 March, 2017 How does the circadian rhythm affects hamster's ability? 	
Things you know ar	ıd things you learned.
31 March, 2017	
 31 March, 2017 Two articles have confirmed that having a functioning circadian rhythm affects a hamster's ability to learn The functioning of all mammals' brains happens from neurochemical balances that excite and calm the brains. The neurochemical GABA inhibits brain activity. Circadian rhythm affect your sleep by affecting an influx of GABA into various parts of the brain to inhi it. However, if the hippocampus, the memory storage part receives too much GABA your memories may not function properly. If they'd lost their Circadian rhythm, they will be receiving too much GABA too often and not rhythmically. Additionally, they tested to find that if they gave the hamster PTZ, which prevents GABA from binding to synapse, this can help solve the problem. 	
Sources:	
https://prezi.com/hviv982y_xhz/hamsters-arent-that-dumb/	

Question Section: Things you know that you don't know	Question Section: Things you didn't know that you don't know
 13 April, 2017 What are the general information of guinea pigs? Which type of cage would be better for animals to live in? (small or big?) 	
Things you know and	d things you learned.
13 April, 2017	
 13 April, 2017 Other name of guinea pigs are called cavies. They are another species of rodent known as Cavia Porcellus. They are originally from South America, however, today they are none in the wild. This is due to the fact that people domesticated them and do selective breeding. Factors such as; cage space had surprisingly affect the mortality rate of rodents. Many conducted researches had proven that rodents living in small spaces tend to survive more, increase their weights, and turns out to be less aggressive. Furthermore, the environmental enrichment also had an impact towards rodents. Rodents that were placed in cages with rigid shelter had demonstrated an increase in aggression and a decrease in weight, which were factors that determine stress. The journal includes various of results from different experiments. Some of which tested the rodents' behavior, brain development, stress levels, and others. 	
Sources:	

http://www.livescience.com/50658-guinea-pig-facts.html https://www.ncbi.nlm.nih.gov/pubmed/10049600 http://cfhs.ca/athome/guinea_pigs

Gonder, J. C., & Laber, K. (2007, January 01). *A Renewed Look at Laboratory Rodent Housing and Management*. Retrieved May 08, 2017, from https://academic.oup.com/ilarjournal/article/48/1/29/690040/A-Renewed-Look-at-Laboratory-Rodent-Housing-and?searchresult=1

Question Section: Things you know that you don't know	Question Section: Things you didn't know that you don't know
18 April, 2017	
How long do hamster live?	
• What do hamsters eat?	
Things you know and	d things you learned.
18 April 2017	
Background Information	
Average pet lifespans 18 months to 9 years. Unique features include the pouch	on the cheeks that allows it to carry extra food when foraging, and also paired
A verage length of hamsters is 10-18cm	
Syrian hamsters are the largest at about 6 inches	
Hamsters store a lot of energy, so they need to exercise a lot.	
Hamsters are along greatures as generate feed and toilet. They need to get all the	a tima
Hamsters are clean creatures so separate rood and tonet. They need to eat an ind	
Sources:	
http://animals.mom.me/characteristics-hamster-1203.html	
http://www.msdvetmanual.com/all-other-pets/hamsters/description-and-physica	al-characteristics-of-hamsters
http://www.habitran.com/ovo/eng/anabout/physicalcharacterists.php?color=wh	

Question Section: Things you know that you don't know Question Section: Things you		Question Section: Things you didn't know that you don't know	
 19 April, 2017 What types of hamsters are suitable as pets? Why do hamster need accessories to exercise? What types of food do hamster need? How do we recognize if a hamster is happy or sad? When should we train hamsters? 		 Why should Syrian hamster be separated for a period of time after birth? Why is Lab blocks and pellets the best fit type of package food for hamster? 	
	Things you know and thing	s you learned.	
19 April, 2017 General informa There are 2 types	tion aboout Hamster of hamster that suitable as a pet: Syrian hamster, Dwarf Hamster		
Information Syrian Hamster Dw		Dwarf Hamster	
General information• Largest Hamster pet breed (18 cm, 180 g) • Can be with other hamsters for only first 6-7 weeks, should be separated after that • Otherwise, the mother will start to chase them away • Need a lot of space to run around, also the accessories for exercising • By exercising, it helps them feel comfortable and are able to avoid illness		 Popular among the professional breeders and small pets owner Small hamster (9-10 cm, 25-50 g) Faster and jumper than Syrian Can live alone or with other hamsters 	
 Food and treats For baby hamster: They need food that contains 18-20% protein, 7-9% fat and a lot of carbs (as the first month of baby hamster is the time that allow them to grow the most). There are 2 types of food: Packaged food, Fresh food Packaged food: Lab Blocks and Pellets <i># Lab Blocks and Pellets is the best fit type of package food for the hamster #</i> Because: It is the packaged food which originally used only in the lab however, nowaday we can find some of this in pet store (it is still used in the lab). It will provide the most proper amount nutrients to your hamster. Fresh food: Greens/Fruits/Veggies 			

	Naturally, Hamster rarely drink water but instead, get them from the food that they ate. Greens will help to provide them water and son extra vitamins that they need however, controlling the amount of green is needed because the hamster may get diarrhea from too much mineral and vitamin. Before providing the hamster some greens, we need to make sure that it doesn't contain the chemical that is toxic to the hamster and wash them before hand them to the hamster. • Carbohydrates Because hamster use a lot of energy in a day, Carbohydrates is needed however, a lot of packaged food already provides this mineral. Therefore, fresh food for the carbs will be provided to your hamster as an additional food if the hamster need. • Proteins Even though we have seen hamster as herbivores, sometimes they also snatch some insects for protein. But, if we already have the packaged food, protein is already provided there. • Other • Salt intake Hamster needs salt in order to retain water. We can provide our hamster with the salt lick or a mineral salt for salt intake. Treats There are many types of the treats selling in the market however, we need to avoid the treats that contain a lot of sugar for our hamster health.		
Behavior	 Feeling 'Happy' Digging around Stretching their limbs 'Curious Watching you with its ears erect 	 Alarming not sure/ insecure' grooming Ears forward with cheek pouches puffed up and mouth open When it empties its cheek pouches quickly It gets startled when you approach It creeps slowly along the sides of it's cage Scared/ Stressed freezes in place always hiding Aggressive Standing on hind legs with their dukes up Get ill /injury lazy or lethargic unresponsive when you approach 	

Interact with your hamster	 Speak softly Observe for the suitable time to train/ tame your hamster no good: the hamster will growl, grinding, and do not interest to you good: raises its head up and looks to you curiously when you open the cage or when it's playing around.
Sources:	
http://thehamsterho https://www.caring	ouse.com/hamster-info/breeding-hamsters/baby-hamsters/ gpets.org/how-to-take-care-of-a-hamster/accessories/

Question Section: Things you know that you don't know	Question Section: Things you didn't know that you don't know
April 20, 2017 CLASS NOTES	
Things you know and th	ings you learned.
Learning and Memory Learning curve: number of trials over the likelihood it will perform the task correct Extinction: Loss of information over time Forgetting curve: a graph over time over the likelihood of forgetting information Stimuli → Anything that are your reaction Pass phrase of building short term to long term periods	ly
 Learning is costly Information that is important now, but not later Information that is important for a long period of time: Can remember when 	re bodies water are, eventually remember where your home is
Sources:	

Question Section: Things you know that you don't know	Question Section: Things you didn't know that you don't know
April 21, 2017 CLASS NOTES	

Things you know and things you learned.

Associative learning

Stimulus

- Causes you to have respond (ex. Smell food, mouth water)
- Cause action to your body
- Ex 1. Cat is not happy, hunged back
- Ex 2. Dogs ears down, puppy roll eyes, butt up

Habituation

- Lot of respond to stimuli (get used to it)
- Prairie dog \rightarrow live in holes \rightarrow see humans/terrified \rightarrow go back into holes (hide)
- * stop, ignore humans after several times, they run into holes and nothing happens

Sensitization

- Increase how you respond to stimulus due to experience
- Dog try to eat prairie dogs \rightarrow Prairie dogs run to hole \rightarrow survive \rightarrow fearful of all dogs (increase fear, dogs mean death)

Conditioning

- Build association between two events
- Prairie dogs see human \rightarrow not a threat \rightarrow
- Prairie dogs fear dogs
- Bird look for bug \rightarrow forage \rightarrow rock (bug under rock) \rightarrow next time it sees the rock \rightarrow they pick it \rightarrow believe that flip rock = find good worms
- Involuntary- can't control
- Classical conditioning teach animal not to be afraid of something
- Operant conditioning- voluntary behavior (can control) choose to do
- Ex. Being quiet while someone is talking

Sources:

Question Section: This	ngs you know that you don't know	Question Section: Things you didn't know that you don't know
 22 April, 2017 What are the general feature What do guinea pigs eat? Which types of environmer What behaviors do guinea pigs How to take care of guinea 	es of guinea pigs? at is best for guinea pigs? bigs have? pigs? (bathing)	What is popcorn behavior?
Are there any health concer	ns for guinea pigs? Things you know and th	ings vou learned.
Guinea pig, or so called Ca although Guinea pigs were not reco General information	 wy, are rodent descended from west coast of Source of the second secon	 about 8 - 10 cm long, when fully grown they would be about 20 - 28 cm. long. about 28 g. and weighs 0.5 - 1 kg. when they 're fully grown. cors and patterns. They can also have long or short or curly furs. g themselves and their human owners with chirping, squeals, squeaks and whistling. ity: Hearing and odor senses are very good.
	 <i>Lifespan:</i> Average lifespan is app <i>Friendliness:</i> They are friendly and cl 	 <i>broximately 5-6 years, but with proper care it could live up to 8 years.</i> <i>Diet type: Herbivores</i> <i>ever, also very social. They're known to be appreciated to live with a pair rather than being all alone.</i>

Diet	 Schedules: It is best to feed guinea pigs with specific time schedule, they require 30 - 50 mg. of vitamin C and 5 - 10 mg. of other minerals per day. Food type: Mostly feed Timothy hay and some vegetables, avoid feeding too much fruits due to fructose and fruit acids that may harm them. Water: Clean and filtered water is needed, avoid giving water which contains chlorine. Vegetables that must avoid: <u>Onion, Garlic, and Bulbous plant</u> causes flatulence*. Large amount of <u>Cabbage</u> causes flatulence and diarrhea <u>Avocadoes</u> <u>Avocadoes</u> Fruits that must avoid: Stone fruits (all kinds) causes diarrhea due to cyanide and rich sugar that are contained. Exotic fruits cause indigestions and colics. No caffeine edibles No caffeine edibles
Housing	 Temperature must not be too extreme, Guinea pigs are able to thrive perfectly normal in normal room temperature (25 C). Space is known to vary, although it is known to buy large cages, the bigger the better Partners could be kept together if they are of the same sex, if either of them are in different sex, it is advised to separate them. Lastly, avoid housing different species together.

Normal Behavior	 Runs away Guinea pigs are easily started creatures, when attempt to pick a guinea pig up out of the sudden, it will run away from you. In the wild guinea pigs are preyed upon quite often, therefore fast piggy are considered safe. Popcorn a behavior done by guinea pigs when excited, which is where they: run around and jump, whilst landing on 4 legs. Freeze action done when guinea pigs feel threatened, or feared. Sleeping most of the time when the guinea pigs' zoning out, they are either taking a quick nap or freezing from fear. Even though it is a rare sight to see guinea pigs close their eyes, it only happens when the guinea pig feels secure and safe. Territory at some point, a guinea pig will scratch and mark an area, where they're the only whom have an excess towards the area. "Talks" when relaxed they might whistle/squeak softly and consistently, also lightly vibrates. However loud, high-pitched squeaks indicate that the animal is in pain. Lastly low pitched purrs, unlike cats, it shows that they are annoyed. Two feet stand they stand with their hind legs, when they're curious or begging for treats Licking they love grooming themselves, by constantly licking their own fur. They hate getting wet. They might also lick a person's hand to show affection. Mad They would hiss or let out a high-pitched shriek, whilst sneering, showing its teeth. Hiding is one of their most favorite thing to do, but would come out and play if familiar people are near Chewing One of the behavior that maintains the guinea pig's oral health, due to the fact that their teeth constantly grows, it would be preferable to find things for them to chew on.
Grooming	 They rarely need any bathing, but can be wiped with damp towels Furs should be brushed with a soft backed brush. If it is a hairless guinea pig, lotions are needed to moisturize their skin. Nails must be clipped once a month It is normal for guinea pigs to have yellow teeth, cleaning is unnecessary

Health Health Issues	Healthy • Active, alert and sociable • Eats and drinks • Healthy fur and clear, bright eyes • Breathes normally • Walks normally • Walks normally • Walks normally • Weight loss • Abnormal hair loss • diarrhea and dirty bottom • Abnormal breathing rhythm • Sluggish movement • eye or narsal discharge • skin lesion • overgrown teeth Diarrhea - poor diet, stress, internal parasites, unclean housing, illness Malooclusion - Over grown teeth Mites/Lices - external parasite causing them to lose hair in a patch like pattern Ringworm - Skin infections caused by fungus Scurvy - Vitamin C deficiency, sore joints and chest, bleeding from gums
Sources:	
Reference(guinea pigs): http://www.petful.com/misc/guinea http://www.peteducation.com/articl https://www.ncbi.nlm.nih.gov/pmc/ http://info.noldus.com/how-wild-ca General info: https://www.petco.com	-pig-companionship-behavior/ e.cfm?c=18+1800&aid=1631 articles/PMC2859863/ vies-and-domesticated-guinea-pigs-differ n/content/petco/PetcoStore/en_US/pet-services/resource-center/caresheets/guinea-pig.html
Diets:	

https://www.guinea-pig-advisor.com/feeding/food-list/

Behaviour:

https://www.petcha.com/10-common-guinea-pig-behaviors-explained/

Question Section: Things you know that you don't know	Question Section: Things you didn't know that you don't know
April 24, 2017 CLASS NOTES	
Things you know and the second	hings you learned.
 Ivan Pavlov Psychologist How insulin affect human behavior Experiment with dog Pavlov's Dog Background Stimuli that is natural → excited → smell food → watery mouth (salivate) Bell rang- neutral stimuli To measure how much saliva there was when dogs get food Unrelated stimuli → bell and food (different respond) Next ring bell with food 	
 Later, bell rings → dogs salivate now even when there's no food Classical Conditioning Pair stimuli with another stimuli (doesn't give respond) → start to get reac 	tion/ respond for the first stimuli
No learning required - Taught to salivate when smell food (natural biological responses)	
Learning required - Dog begin to associate bell with food	
Unconditioned stimulus (UCS) = Food \rightarrow doesn't need to be learned, natural response Unconditioned response (UCR) = Salivation \rightarrow natural response	onse
Sources:	

Question Section: Things you know that you don't know	Question Section: Things you didn't know that you don't know
April 27, 2017 CLASS NOTES	
Things you know and	things you learned.
 Types of Classical Conditioning Flooding Desensitization Graded Exposure Counterconditioning – graded counterconditioning 	
 Flooding Forcing dogs to sit under chair which they are scared of Stay there until no longer afraid Not recommended, should not perform Takes a long time Put in fear for short period of time → doesn't help → be more scared False flooding → Stop reacting because they are so exhausted, makes the 	m more scared
 Desensitization Treat fear, anxiety, disorder, and phobias Exposed to stimulus until you are not scared 1. Find what causes stress (fear signals) 2. Expose to relax 3. Change variable 	
Sources:	

Question Section: Things you know that you don't know	Question Section: Things you didn't know that you don't know
April 27, 2017	
CLASS NOTES	
Things you know and th	ings you learned.

Graded Exposure

- Expose animal to stimulus in steps that no longer causes fear or distress
- Will be uncomfortable (fear, but not aggression \rightarrow too emotional to learn \rightarrow too dangerous

Counterconditioning

- Build up something scary with wonderful things (foods)

Sources:

Question Section: Things you know that you don't know	Question Section: Things you didn't know that you don't know
May 6, 2017What types of mazes are there and how do they work?	 What is Morris water maze? What is Barnes maze? What is Radial arm maze?
Things you know an	d things you learned.
 Morris water maze: It would be like a circular shaped bucket. This would include water that is opaque which is usually made with milk powder. This circular material would be divided into four quadrants and the subjects would be released to run around until they find a plat form which would help them get out of this maze. Barnes maze: There would be a circular plate for the subjects to run on. This circular plate would contain holes in which one of the holes would contain an escape platform. Radial arm maze: It would be similar to a wheel. It has a center and arms would be around it. Food would be placed around the arms. The subjects would be starved in order to run the maze. Although radial arm maze is divided into two different types of experiment. Food would be placed in all arms and the subjects would be tested whether they remember which arm they have entered. Entering the same one twice would count as a mistake. Although, this method is not very efficient because some subjects run the maze in a particular order such as clockwise or counter clockwise which is not able to determine whether it has good memory or not. Food would be place in specific arms. Maze would be run several times to test whether the subjects are able to remember which arm it already entered. 	
Sources:	
Drapeau, E., Mayo, W., Aurousseau, C., Moal, M. L., Piazza, P., & Abrous, D. N. (2003). <i>Spatial memory performances of aged rats in the water maze predict levels of hippocampal neurogenesis</i> . Proceedings of the National Academy of Sciences, 100(24), 14385-14390. doi:10.1073/pnas.2334169100 Vorhees, C. V., & Williams, M. T. (2014). <i>Assessing Spatial Learning and Memory in Rodents</i> . Retrieved May 08, 2017, from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4240437/	
Darcet, F., Mendez-David, I., Tritschler, L., Gardier, A. M., Guilloux, J., & David, D. J. (2014, April 03). <i>Learning and memory impairments in a neuroendocrine mouse model of anxiety/depression</i> . Retrieved May 08, 2017, from http://journal.frontiersin.org/article/10.3389/fnbeh.2014.00136/full Barnhart, C. D., Yang, D., & Lein, P. J. (n.d.). <i>Using the Morris Water Maze to Assess Spatial Learning and Memory in Weanling Mice</i> . Retrieved May 08, 2017, from http://journals.plos.org/plosone/article?id=10.1371%2Fjournal.pone.0124521	

Question Section: Things you know that you don't know	Question Section: Things you didn't know that you don't know
May 6, 2017	• What are T mazes?
	• What are hole board mazes?
	• What are star mazes?
Things you know :	and things you learned.
 Tmazes: Mazes has the same of T or Y. In T mazes, there are only two choices for the subjects to choose whether which side they would move to. This is to test whether they have spatial learning and memory access and creates a habit for them to keep turning in one direction, either left or right. By this, the animals would be awarded if they turn in a particular direction. Hole board mazes: It requires the same concept as the Morris water maze. There are 25 holes and 5 of them would always contain food and the other 20 holes has nothing. From this, it tests to see whether animals are able to remember which holes contain food and which ones do not. This experiment includes starving animals too. Despite this fact, they conduct 6 trials each days for a period of 5 days with 6 mices. They were able to differentiate between spatial working and reference memory effects. Star maze: It is a newer water maze. It consists of 5 arms and a central pentagonal interior. Animals cannot swim directly to the next arms but are able to swim around the pentagon. One arm is set as the starting arm and the other is always set as the finishing arm. In the first training part, the platform will be seen by it and teaches it to escape. However, during the learning process, the platform could not be clearly seen. The pentagon includes decorations to help the subjects determine left and right. From this, it would learn which path would be the shortest distance to reach its goal. 	
Vorhees, C. V., & Williams, M. T. (2014). Assessing Spatial Learning and I	Memory in Rodents. Retrieved May 08, 2017, from
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4240437/	

Question Section: Things you know that you don't know	Question Section: Things you didn't know that you don't know
/lay 9, 2017	
LASS NOTES	
Things you know and	things you learned.
ohn B. Watson and Rosalie Rayner	
- Study of generalization	
- Guinea pigs and rabbits \rightarrow different animals, same category	
ittle Albert Experiment	
- Experiment generalization of conditioned fear in human	
- Little Albert (11 month old)	
- Exposed to little white mouse (neutral stimulus) \rightarrow does not have fear	
- Exposed to loud sound \rightarrow cried out of fear	
- They combine white mouse and loud sound \rightarrow was frightened of white r	nouse due to it coming with loud noises
- After that Little Albert fear furry white objects (rabbit, fur, coat, Watson	wearing Santa Claus mask)

Sources:

Question Section: Things you know that you don't know	Question Section: Things you didn't know that you don't know
May 9, 2017 CLASS NOTES	
Things you know and th	ings you learned.
Classical conditioning - Association between two stimuli	
Operant Conditioning - Association between a behavior and a consequence	
Important terms Positive - Adding something good/bad	
Negative - Taking something good/bad away	
Reinforcement - Trying to get them to do a behavior	
Punishment - Trying to stop a behavior	
Sources:	

Question Section: Things you know that you don't know	Question Section: Things you didn't know that you don't know
May 9, 2017 CLASS NOTES	• What is reinforced?
Things you know and t	hings you learned.
 Edward Thorndike Learning and how learning takes place when the response of the animal is don't like or want Thorndike's puzzle box Put cat in the box 	reinforced: encouraging a behavior; giving rewards, doing something they
 Put salmon outside the box Cat wants to eat salmon (it sees or smells it) Tries to reach to the box to get salmon Finally realize cannot get salmon until he gets off the box If the cat can get out of the box, they would get to eat the salmon Put cat back to the box Put new fish as reward 	
 Cat has encouragement to go out of the box Push the latches, gets out of the box Finally realizes that if it steps on the latch it could escape Next time, tries to remember what actions they did in the previous time that made the box open. 	
Sources:	

Question Section: Things you know that you don't know	Question Section: Things you didn't know that you don't know
May 9, 2017 CLASS NOTES	
Things you know and th	ings you learned.
 Skinner Box: Positive reinforcement (add something → food ; to get them to repea Best way to train animal and people Box did not contain any food. Press lever → food disperser lets food out Learns to press the lever and gets food immediately (Repeat behavior) Another Positive Reinforcement If press lever when there's light → it gets food (during day) 	t behavior)
 If press lever at night → do not get food (in the dark) Same goes with music Music played → press lever → food come out Music not played → press lever → food do not come out 	
 Negative Reinforcement (take away, pain) Use the same rat Put electrified grid on the floor, gets electric shock (continuously) Press the lever → electrified grid goes off (has to keep pressing it, can't let go) Since it hurts, it wants to remove pain 	
Sources:	

Question Section: Things you know that you don't know	Question Section: Things you didn't know that you don't know
May 9, 2017	
CLASS NOTES	
Things you know and t	hings you learned.
Types of operant conditioning	
Positive reinforcement: adding food to a particular behavior.	
Negative reinforcement: rats and electrified floors	to cuts when it solutenes your solu
Negative punishment: Taking something away to stop a behavior; stop giving bird	attention when it squawks
Sources:	